

**CLAIMS**

1. An illumination apparatus, comprising:  
a first number of first light sources adapted to generate first radiation having a  
5 first spectrum; and  
a second number of second light sources adapted to generate second radiation  
having a second spectrum different than the first spectrum,  
wherein the first number and the second number are different.
- 10 2. The illumination apparatus of claim 1, further comprising:  
at least one controller coupled to the first number of first light sources and the  
second number of second light sources and configured to independently control at least a  
first intensity of the first radiation and a second intensity of the second radiation so as to  
controllably vary at least an overall perceivable color of visible radiation generated by  
the illumination apparatus.
3. The illumination apparatus of claim 2, wherein the at least one controller is  
configured to generate a first control signal to control all of the first light sources  
substantially identically, and a second control signal to control all of the second light  
15 sources substantially identically.
4. The illumination apparatus of claim 2, wherein the at least one controller is  
configured to independently control at least the first intensity of the first radiation and  
the second intensity of the second radiation using a pulse width modulation (PWM)  
20 technique.
5. The illumination apparatus of claim 4, wherein the at least one controller is  
configured to generate a first PWM control signal to control all of the first light sources  
substantially identically, and a second PWM control signal to control all of the second  
25 light sources substantially identically.

6. The illumination apparatus of claim 3, wherein each light source of the first and second light sources is an LED.

7. The illumination apparatus of claim 2, wherein the at least one controller is  
5 configured as an addressable controller capable of receiving at least one network signal including at least first lighting information relating to the overall perceivable color of visible radiation generated by the illumination apparatus.

8. The illumination apparatus of claim 7, wherein the at least one network signal  
10 includes address information and lighting information for a plurality of illumination apparatus, and wherein the at least one controller is configured to process the at least one network signal based on at least the address information in the at least one network signal to recover the first lighting information.

9. The illumination apparatus of claim 7, wherein the at least one network signal is  
15 formatted using a DMX protocol, and wherein the at least one controller is configured to independently control at least the first intensity of the first radiation and the second intensity of the second radiation based at least in part on the DMX protocol.

10. An illumination method, comprising acts of:

A) generating first radiation having a first spectrum from a first number of first  
20 light sources; and

B) generating second radiation having a second spectrum different than the first  
spectrum from a second number of second light sources,

25 wherein the first number and the second number are different.

11. The illumination method of claim 10, further comprising an act of:

C) mixing at least a portion of the first radiation and a portion of the second  
radiation to provide visible radiation having an overall perceivable color.

12. The illumination method of claim 11, further comprising an act of:

D) independently controlling at least a first intensity of the first radiation and a second intensity of the second radiation so as to controllably vary at least the overall perceivable color of the visible radiation.

13. The illumination method of claim 12, wherein the act D) includes acts of:  
D1) controlling all of the first light sources substantially identically; and  
D2) controlling all of the second light sources substantially identically.

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14. The illumination method of claim 13, wherein the act D) includes an act of:  
independently controlling at least the first intensity of the first radiation and the second intensity of the second radiation using a pulse width modulation (PWM) technique so as to controllably vary at least the overall perceivable color of the visible radiation.

15. The illumination method of claim 13, wherein each light source of the first and second light sources is an LED.

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16. The illumination method of claim 12, further comprising an act of:  
receiving at least one addressed network signal including at least first lighting information relating to the overall perceivable color of the visible radiation,  
wherein the act D) includes an act of:

15 independently controlling at least the first intensity of the first radiation and the second intensity of the second radiation based at least in part on the first lighting information.

17. The illumination method of claim 16, wherein the at least one network signal  
20 includes address information and lighting information for a plurality of illumination apparatus, and wherein the method further comprises an act of:

processing the at least one network signal based on at least the address information in the at least one network signal to recover the first lighting information.

18. The illumination method of claim 16, wherein the at least one network signal is formatted using a DMX protocol, and wherein the act D) includes an act of:

independently controlling at least the first intensity of the first radiation and the second intensity of the second radiation based at least in part on the DMX protocol.

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19. An illumination apparatus, comprising:

a plurality of first light sources adapted to generate first radiation having a first spectrum;

a plurality of second light sources adapted to generate second radiation having a second spectrum different than the first spectrum; and

10 at least one controller coupled to the plurality of first light sources and the plurality of second light sources and configured to independently control at least a first intensity of the first radiation and a second intensity of the second radiation so as to controllably vary at least an overall perceivable color of visible radiation generated by the illumination apparatus,

15 wherein the at least one controller is configured to generate a first control signal to control all of the first light sources substantially identically, and a second control signal to control all of the second light sources substantially identically.

20. The illumination apparatus of claim 19, wherein respective numbers of the first light sources and the second light sources are different.

21. The illumination apparatus of claim 19, wherein the at least one controller is configured to independently control at least the first intensity of the first radiation and  
20 the second intensity of the second radiation using a pulse width modulation (PWM) technique.

22. The illumination apparatus of claim 19, wherein each light source of the first and second light sources is an LED.

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23. The illumination apparatus of claim 19, wherein the at least one controller is configured as an addressable controller capable of receiving at least one network signal including at least first lighting information relating to the overall perceivable color of visible radiation generated by the illumination apparatus.

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24. The illumination apparatus of claim 23, wherein the at least one network signal includes address information and lighting information for a plurality of illumination apparatus, and wherein the at least one controller is configured to process the at least one network signal based on at least the address information in the at least one network  
10 signal to recover the first lighting information.

25. The illumination apparatus of claim 23, wherein the at least one network signal is formatted using a DMX protocol, and wherein the at least one controller is configured to independently control at least the first intensity of the first radiation and the second  
15 intensity of the second radiation based at least in part on the DMX protocol.

26. An illumination method, comprising acts of:

A) generating first radiation having a first spectrum from a plurality of first light sources;

B) generating second radiation having a second spectrum different than the first  
20 spectrum from a plurality of second light sources;

C) mixing at least a portion of the first radiation and a portion of the second radiation to provide visible radiation having an overall perceivable color; and

D) independently controlling at least a first intensity of the first radiation and a second intensity of the second radiation so as to controllably vary at least the overall  
25 perceivable color of the visible radiation,

wherein the act D) includes acts of:

D1) controlling all of the first light sources substantially identically; and

D2) controlling all of the second light sources substantially identically.

27. The illumination method of claim 26, wherein respective numbers of the first light sources and the second light sources are different.

28. The illumination method of claim 26, wherein the act D) includes an act of:  
independently controlling at least the first intensity of the first radiation and the second intensity of the second radiation using a pulse width modulation (PWM) technique.

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29. The illumination method of claim 26, wherein each light source of the first and second light sources is an LED.

30. The illumination method of claim 12, further comprising an act of:  
10 receiving at least one addressed network signal including at least first lighting information relating to the overall perceivable color of the visible radiation,  
wherein the act D) includes an act of:  
independently controlling at least the first intensity of the first radiation and the second intensity of the second radiation based at least in part on the first lighting  
15 information.

31. The illumination method of claim 30, wherein the at least one network signal includes address information and lighting information for a plurality of illumination apparatus, and wherein the method further comprises an act of:  
20 processing the at least one network signal based on at least the address information in the at least one network signal to recover the first lighting information.

32. The illumination method of claim 30, wherein the at least one network signal is formatted using a DMX protocol, and wherein the act D) includes an act of:  
25 independently controlling at least the first intensity of the first radiation and the second intensity of the second radiation based at least in part on the DMX protocol.